

Nantasket Seawall Coastal Damage Reduction Project Phase 2: Beach Nourishment



DCR Public Hearing

**April 30, 2018 – 7:00pm
High School, Hull**



Commonwealth of Massachusetts

Governor

Charles D. Baker

Lieutenant Governor

Karyn E. Polito

Energy and Environmental Secretary

Matthew A. Beaton

Department of Conservation and Recreation Commissioner

Leo P. Roy



DCR Mission Statement

*To protect, promote and enhance our
common wealth of natural, cultural
and recreational resources
for the well-being of all.*

Purpose of Public Hearing

Present information and discuss proposed
Nantasket Beach nourishment project
in pursuit of an Order of Conditions

Project Purpose



- Reduction in Overtopping

(as recommended in 2010 Coastal Assessment report)

- Recreational Beach at High Tide

(part of the 2016 Master Plan)



DCR is assisted by the USACE



- The U.S. Army Corps of Engineers has a history of designing coastal solutions. USACE has been working with DCR at Nantasket Beach for decades.
 - Designed southern seawall stabilization
 - Designed northern seawall replacement and revetment
 - Designed Phase 1 (Toe protection) of Storm Damage Reduction Project
- The USACE may pay for a large portion of the nourishment project



Project Schedule

Preparation

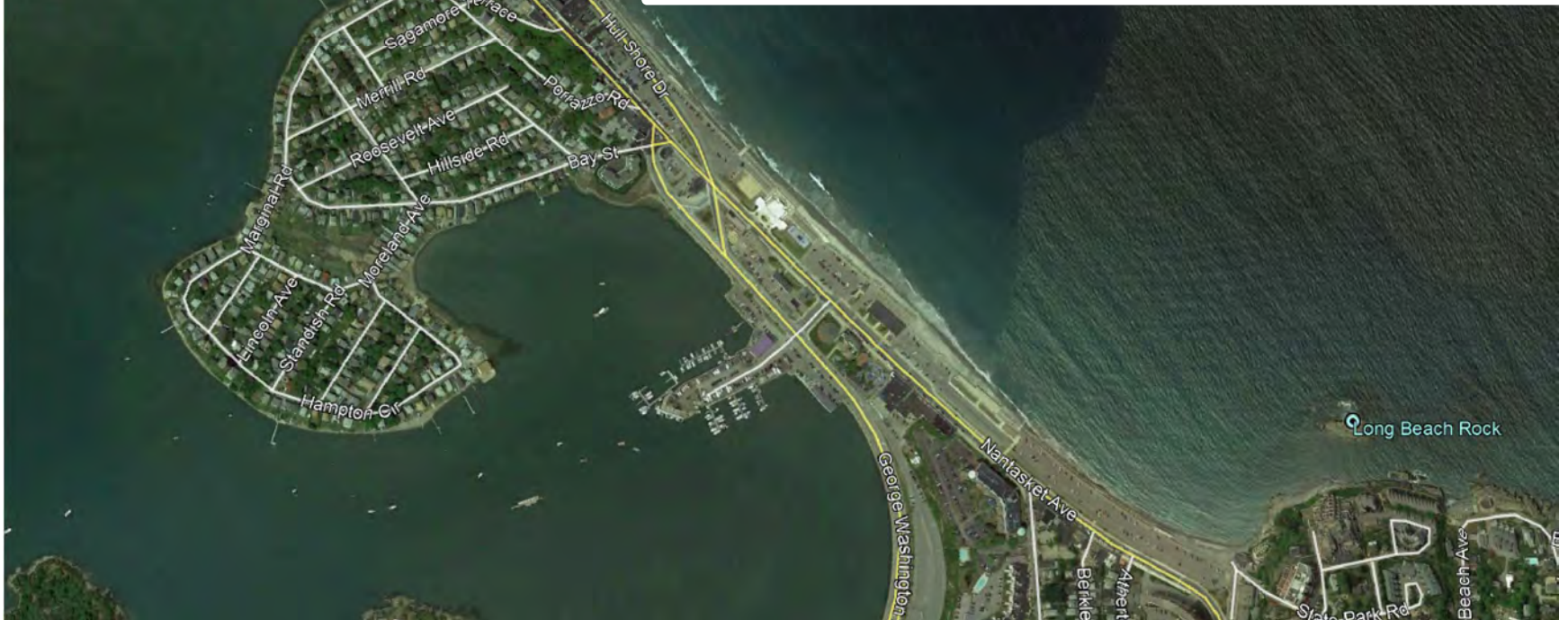
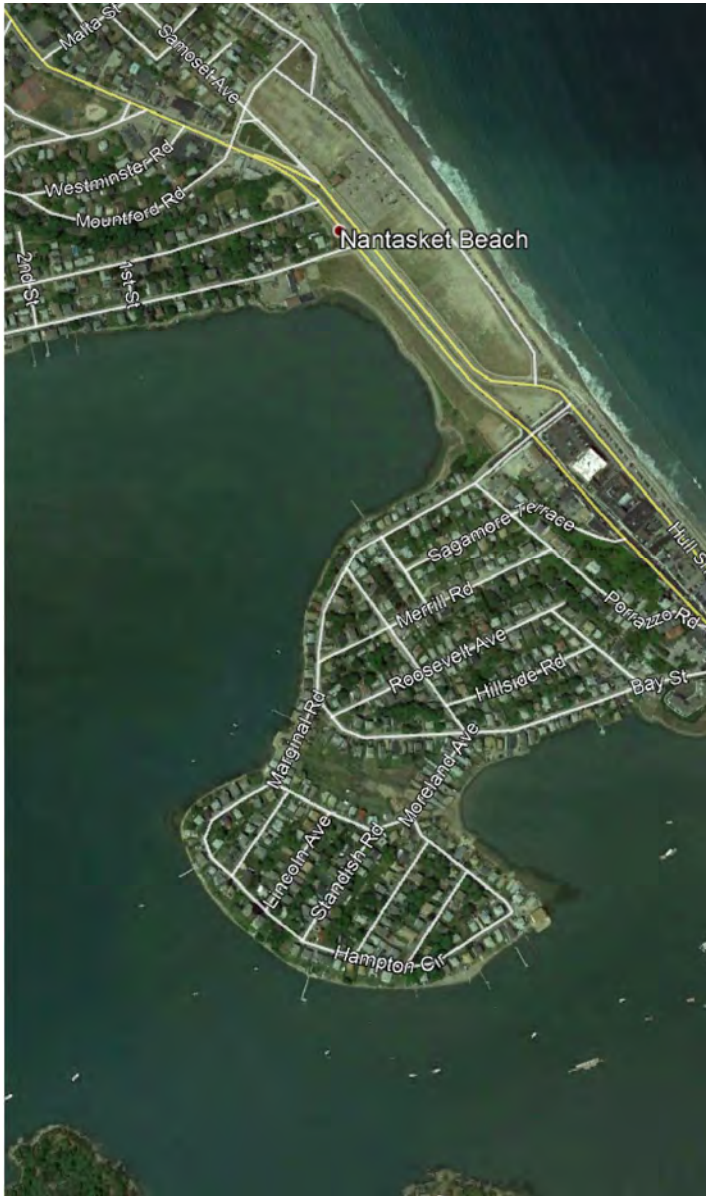
- Conceptual Design Mar 2018 ☒
- Submit Permit Applications Mar 2018 ☒
- Obtain Permits Jul 2018

Implementation (Potential Years: 2018, 2019, or 2020*)

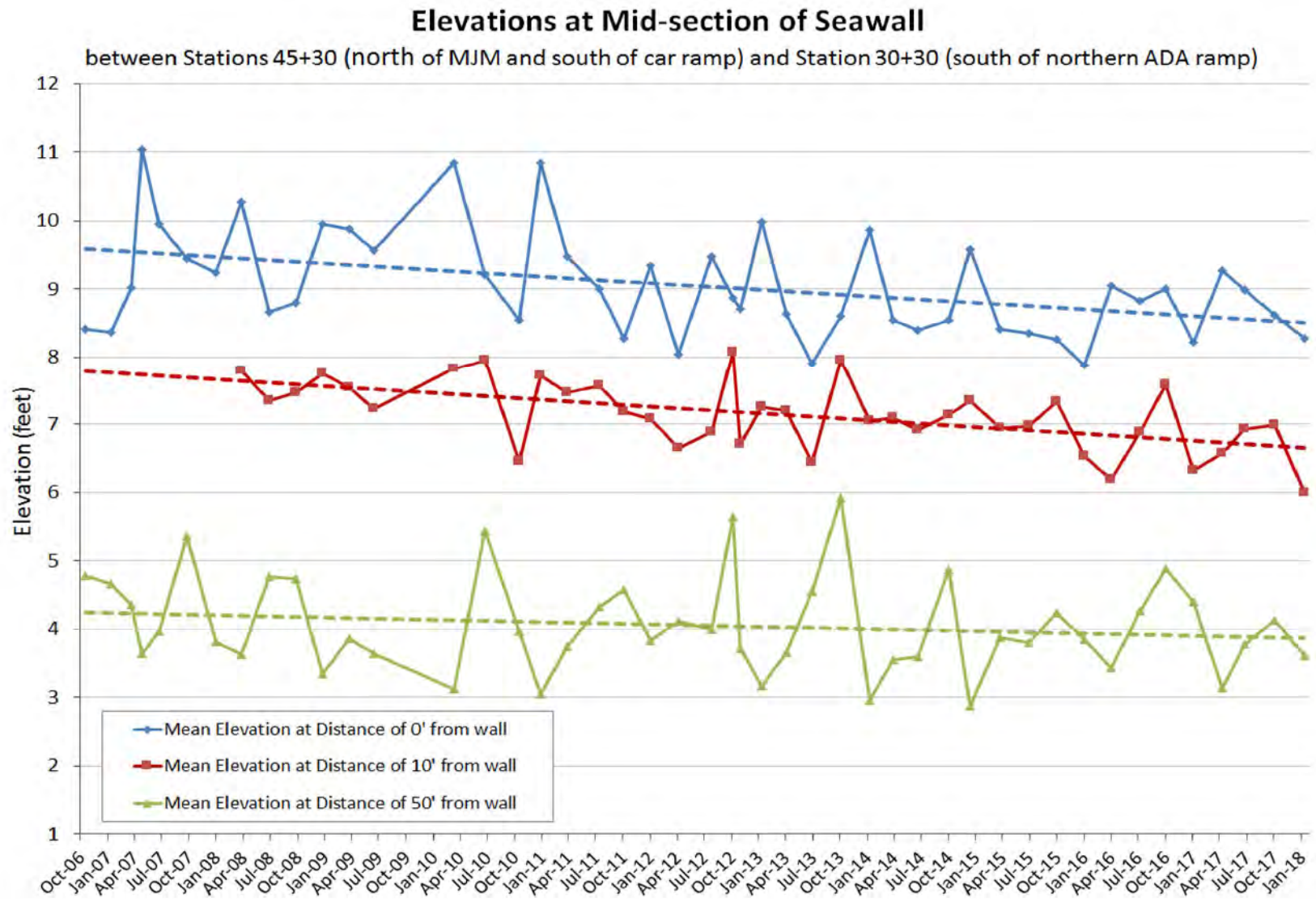
- Final Design and Bidding Jul – Sep
- Mobilization – Nantasket Oct 1 – 15
- Dredging Piscataqua Oct 15 – Apr 15
- Placement Nantasket Oct 15 – Mar 31

* Depending on funding for USACE for Piscataqua River dredging

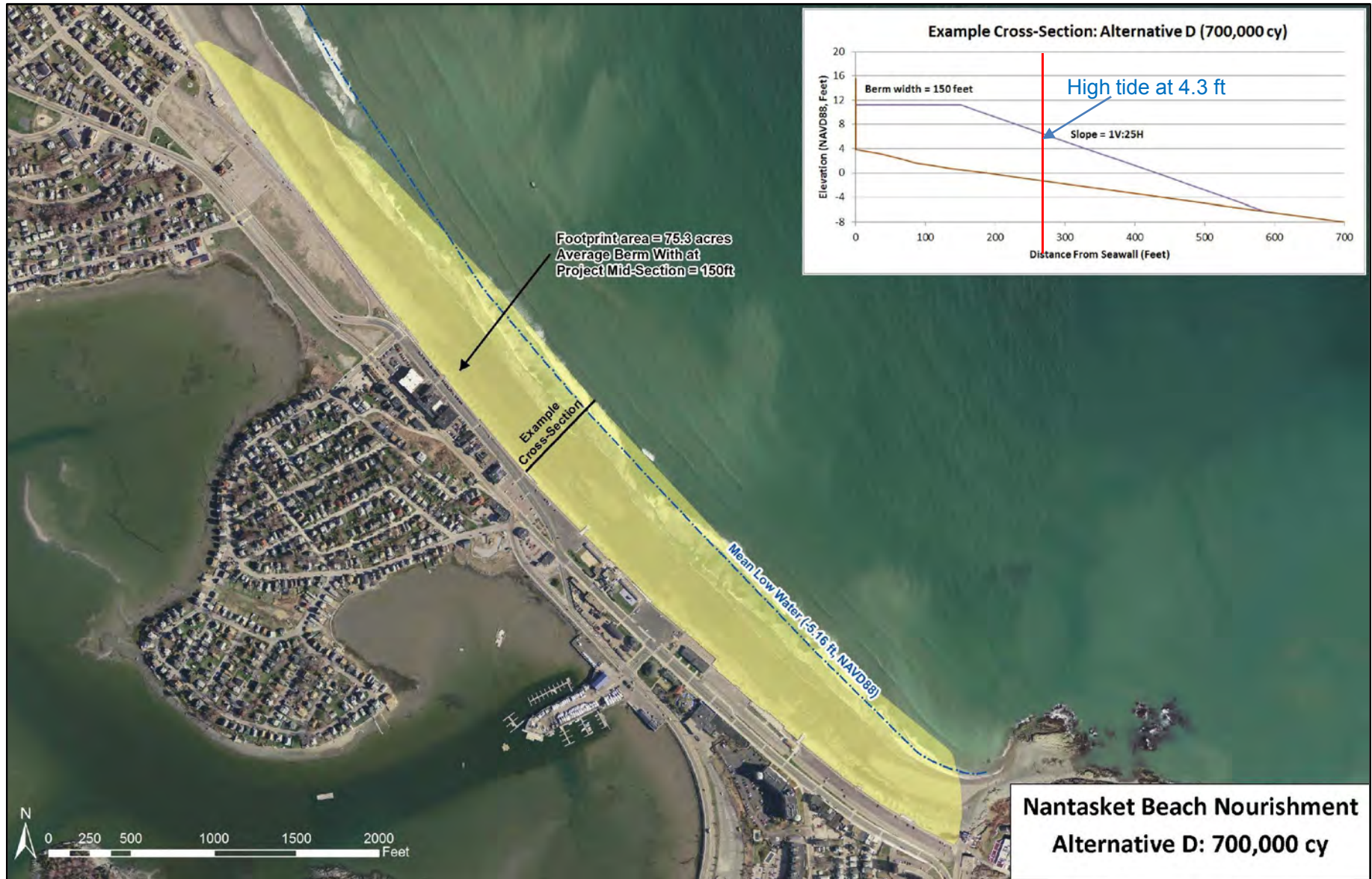
High-Tide Condition



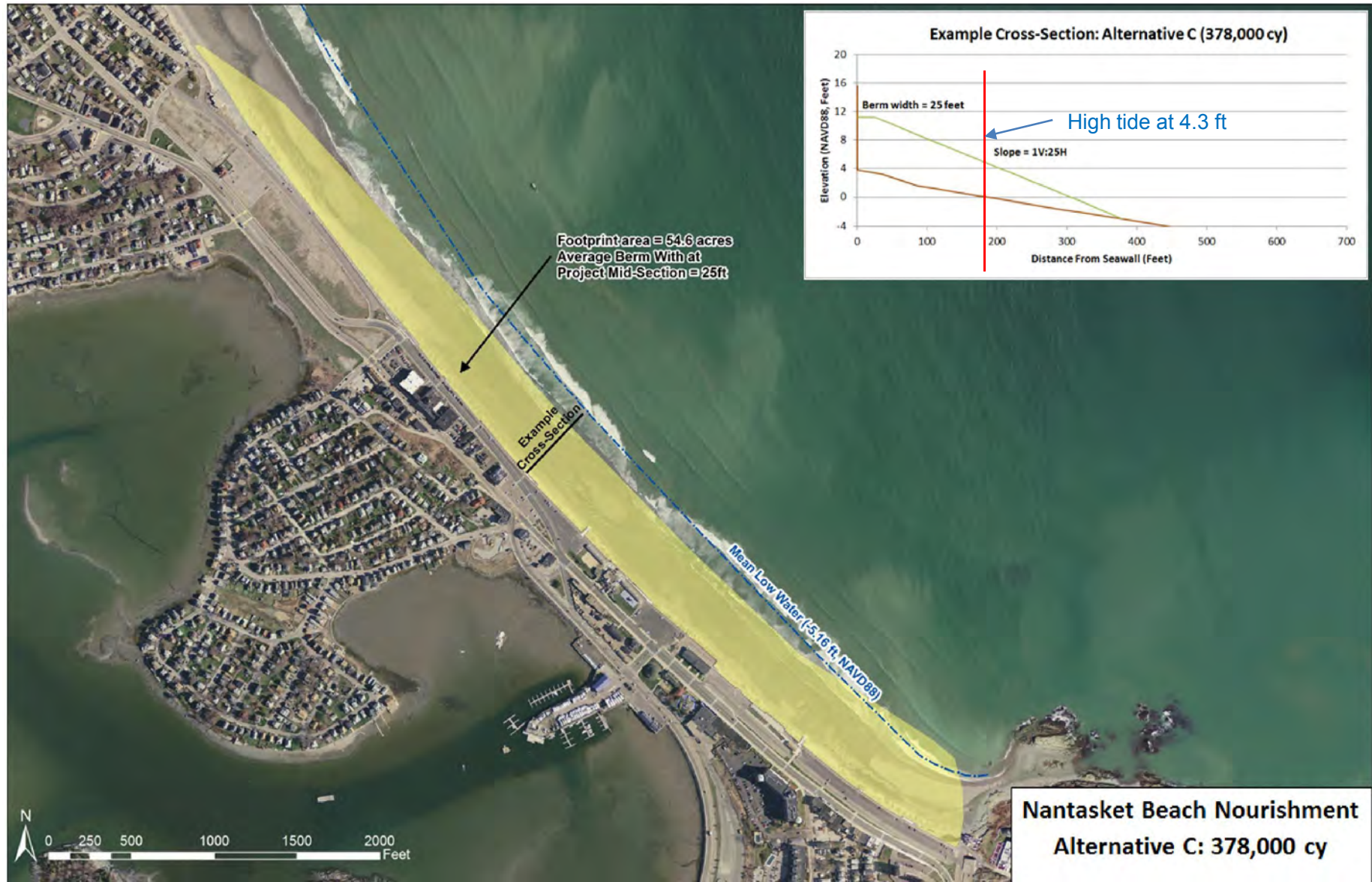
Beach Elevation Monitoring



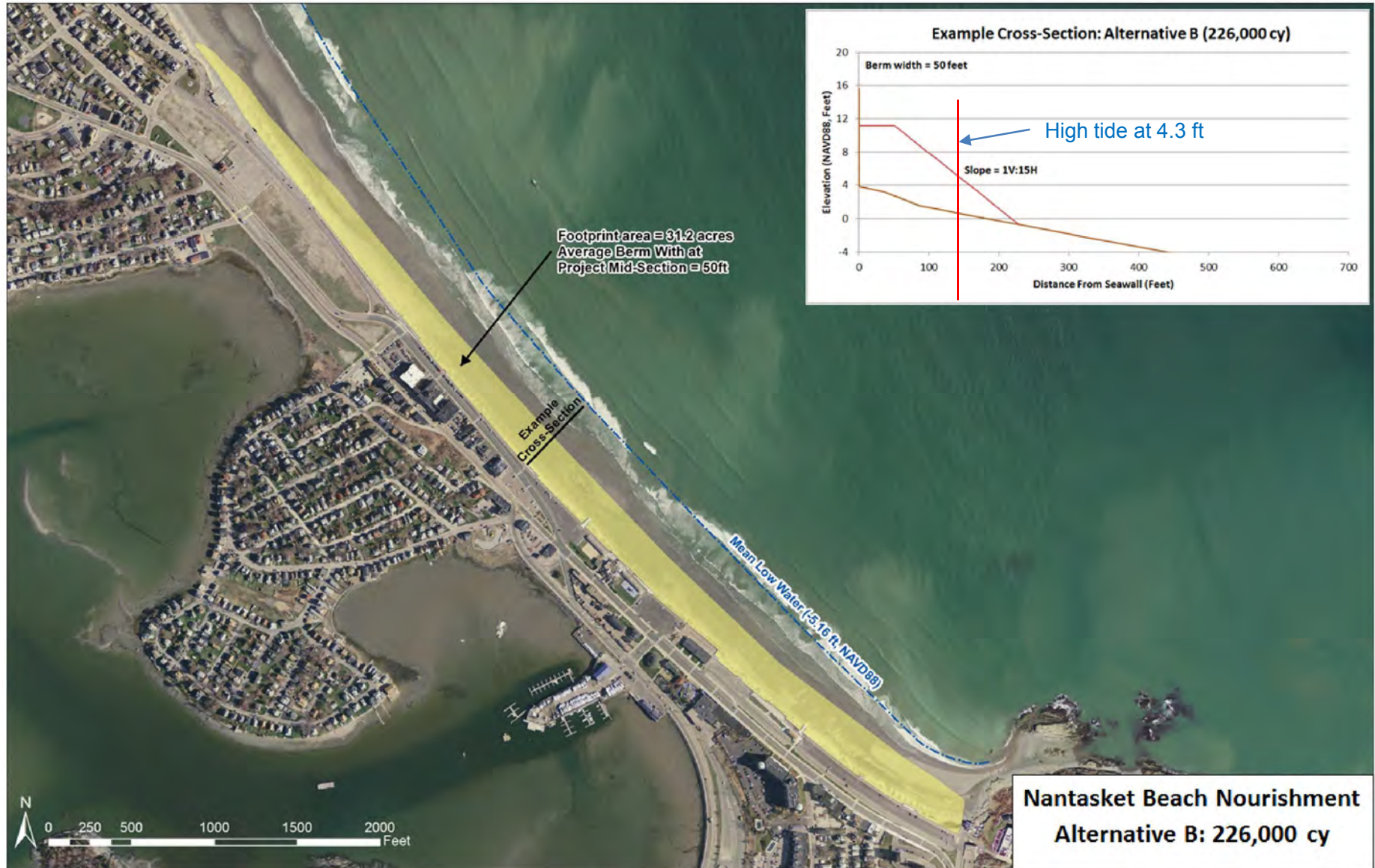
Beach Nourishment – Footprint 700,000 cy (Alt. D)



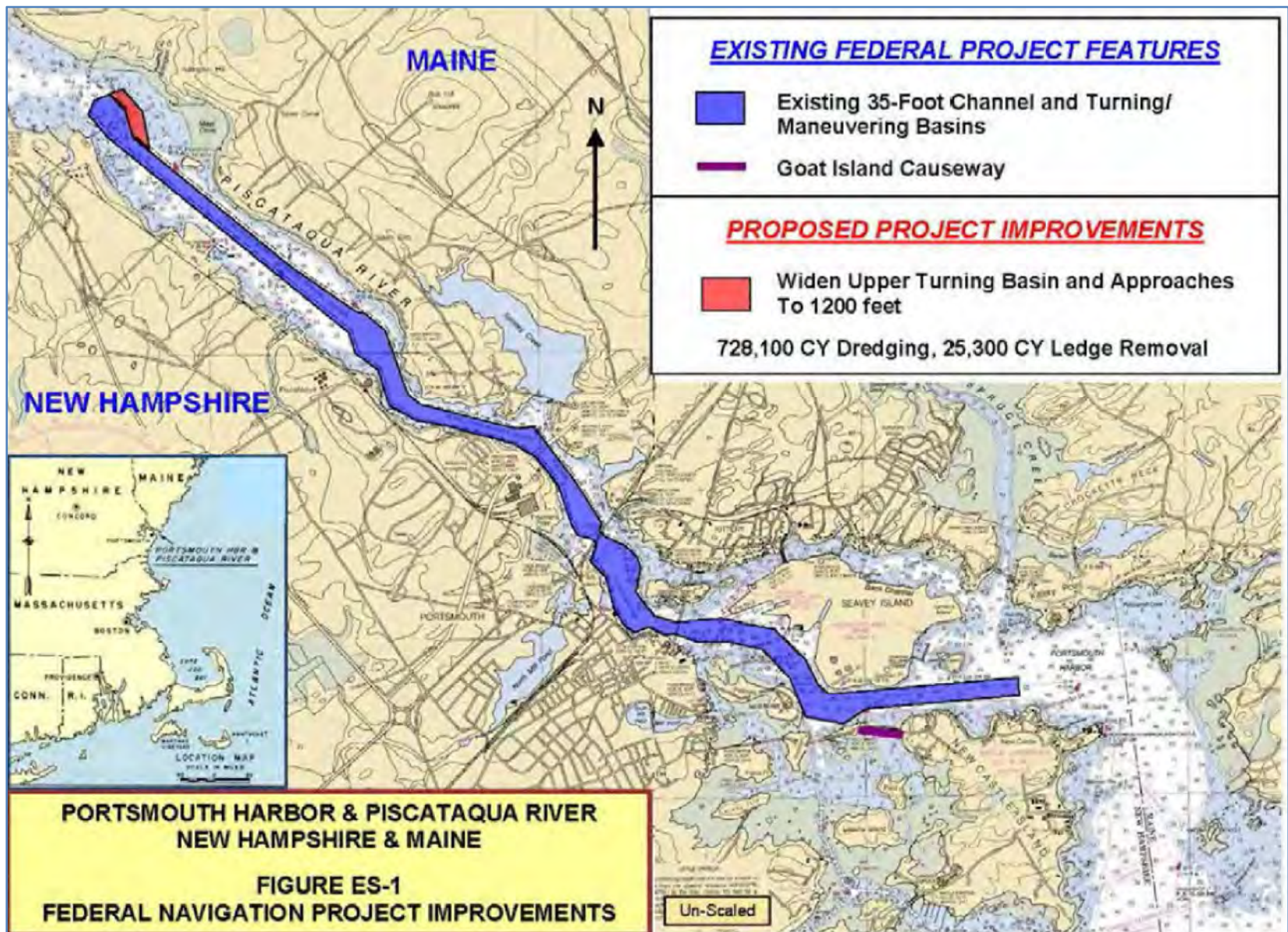
Beach Nourishment – Footprint 378,000 cy (Alt. C)



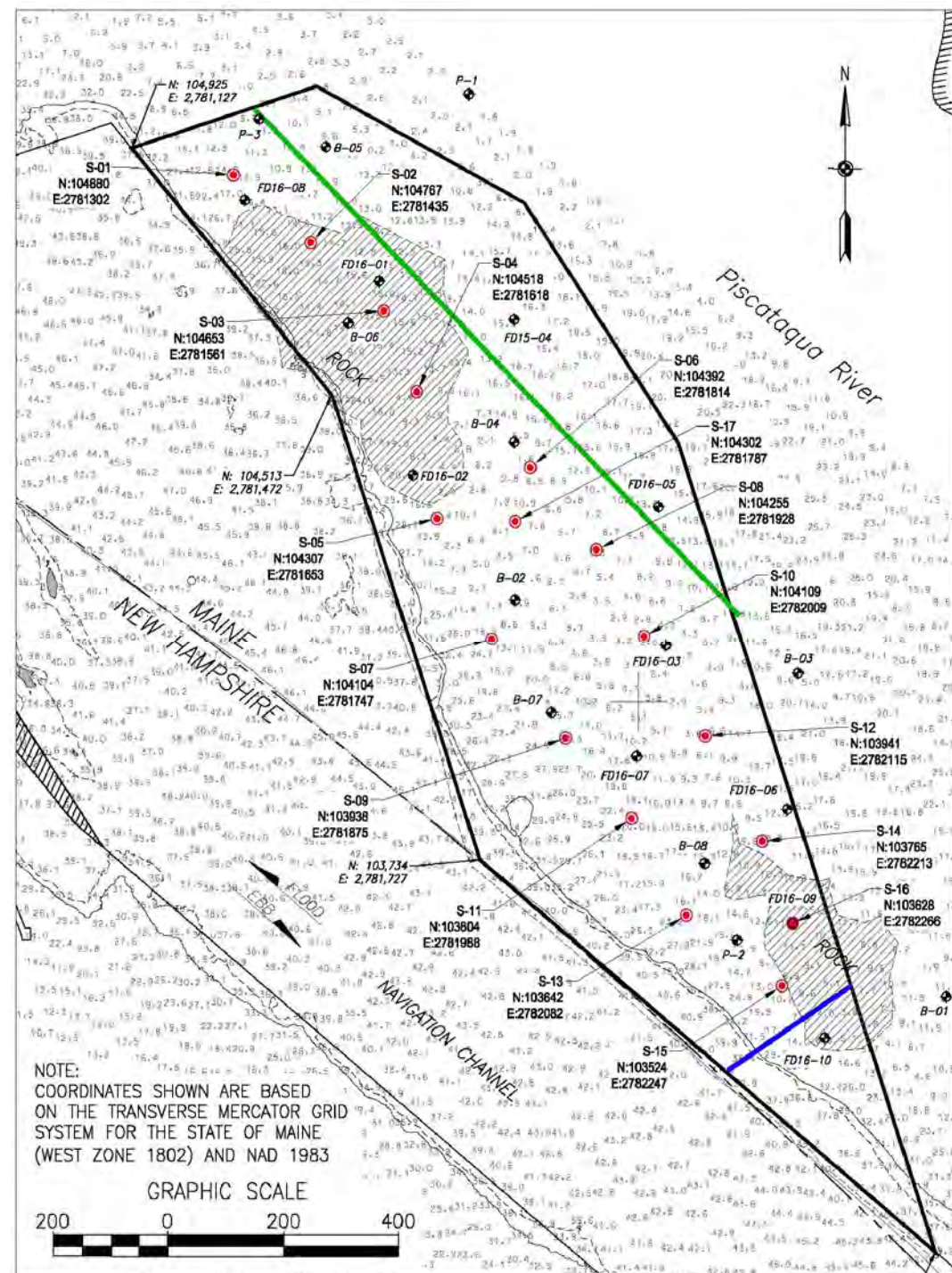
Beach Nourishment – Footprint 226,000 cy (Alt. B)



Piscataqua River Source



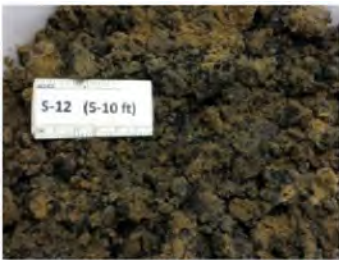
Piscataqua Sampling



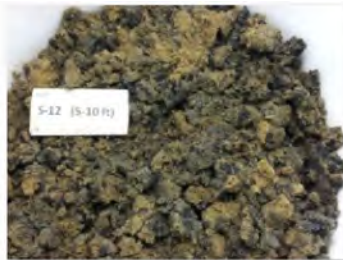
Cores



Sediment Samples (total of 56)



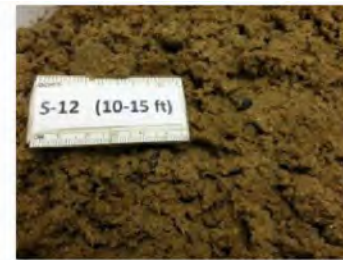
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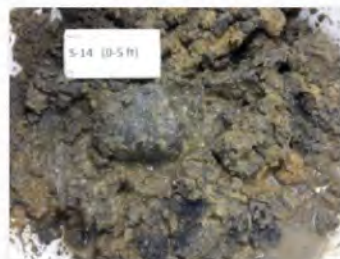
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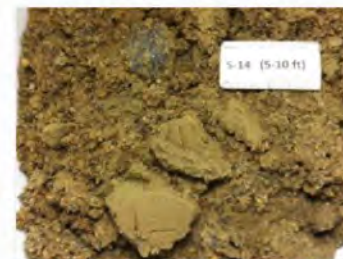
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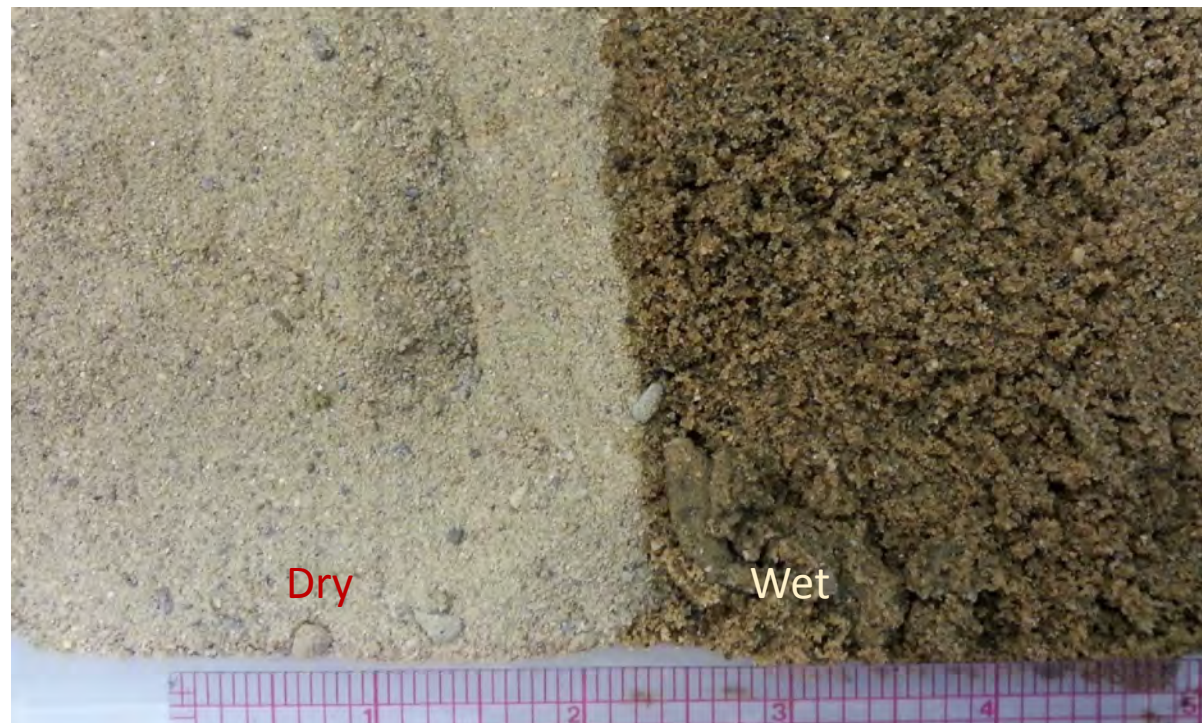
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Color

Nantasket



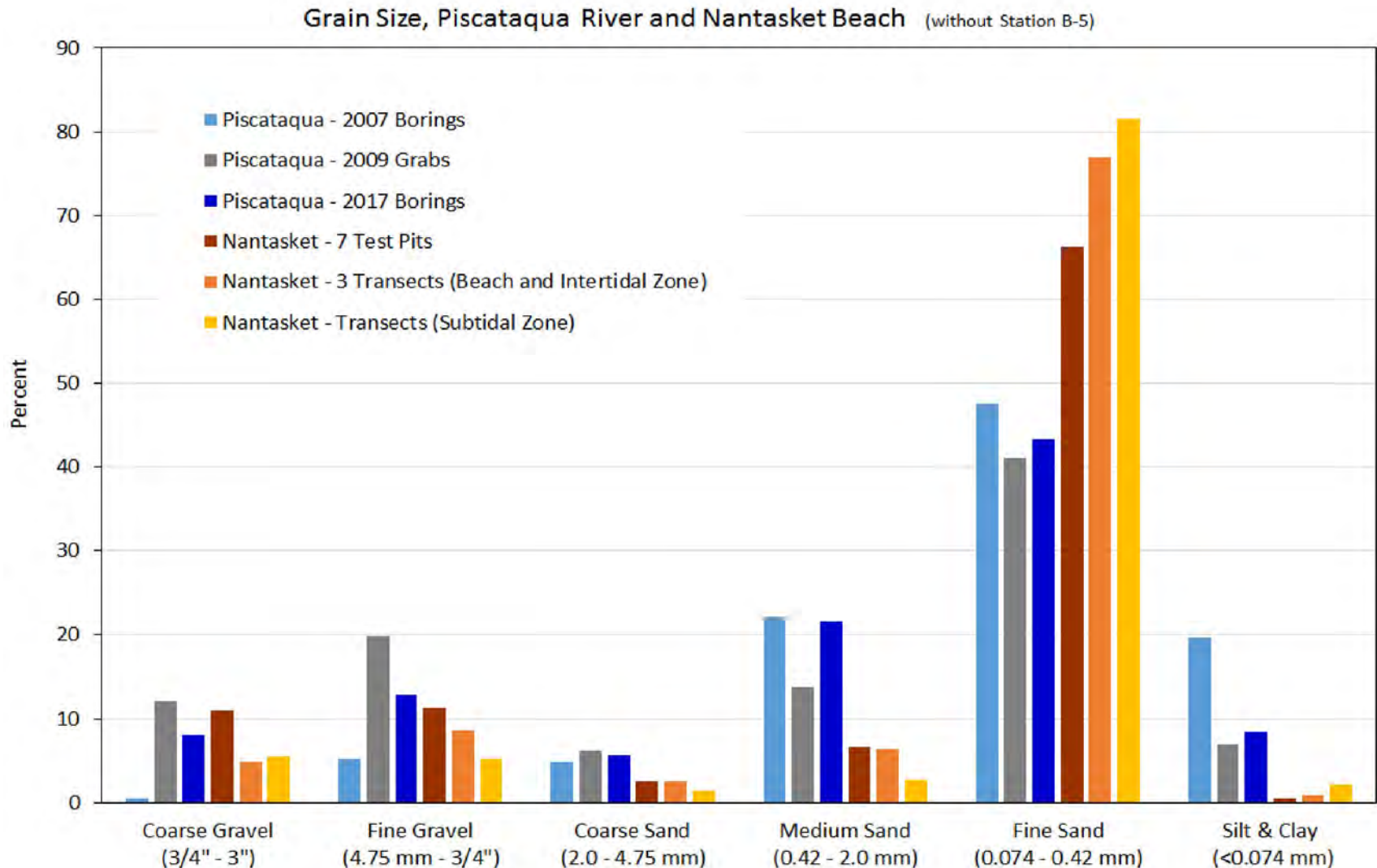
Piscataqua



Nantasket Sampling



Physical Suitability (Grain Size)



Chemical Suitability

- Tested 19 samples for metals, organic compounds, mostly from upper 5 feet
- All measured concentrations were below MassDEP background concentrations in natural, undisturbed soils
- All detected chemical concentrations in Piscataqua River sediment samples were lower than health risk-based screening levels protective of individuals that contact the sediment while recreating at a beach
- *Piscataqua River sediment used for beach nourishment at Nantasket Beach would not affect the health of biota or recreationists that contact them*

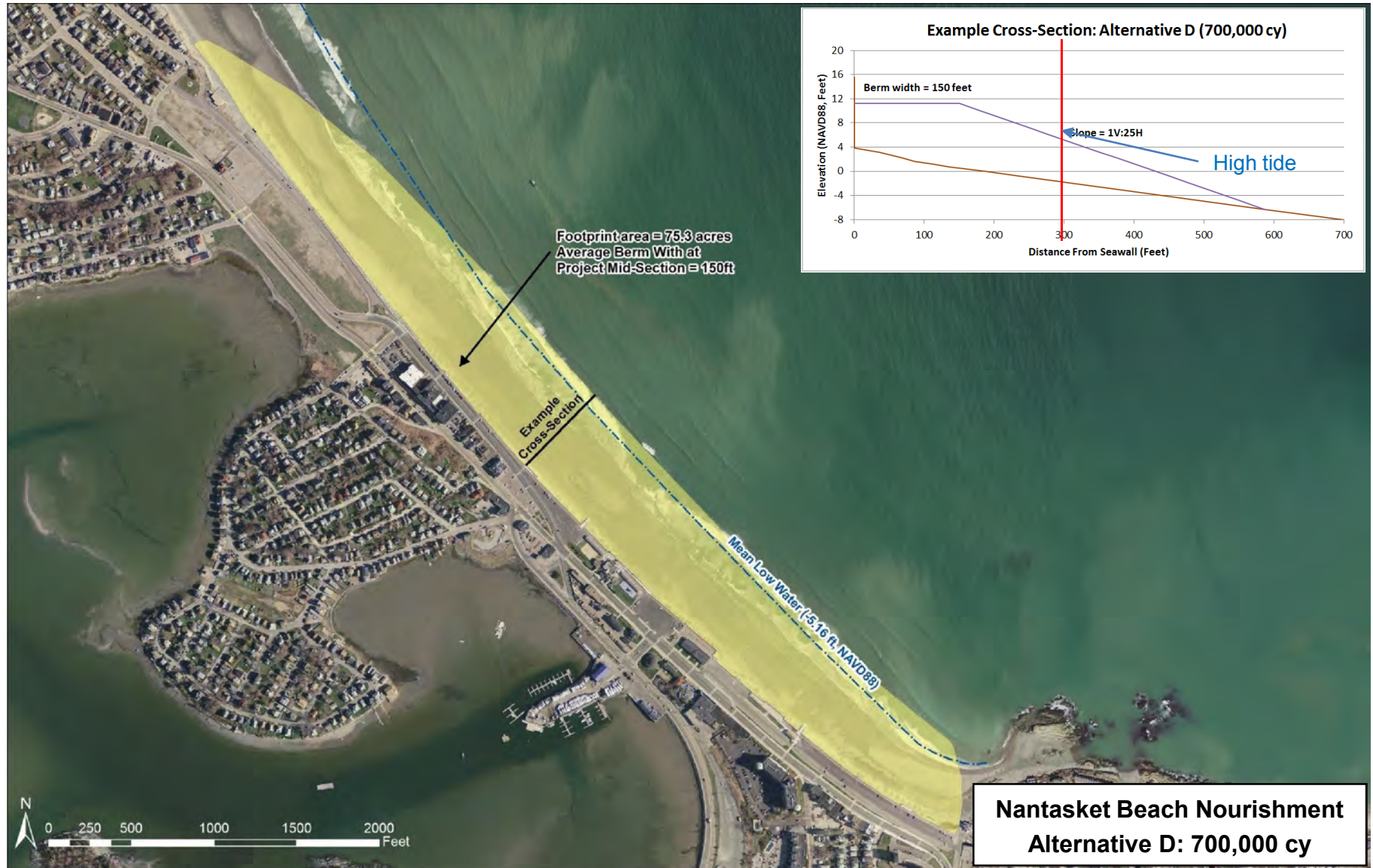


Placement

- Construction window: October 1 to March 31
- Piscataqua River material transported by tug/scow
- Pump from scow (moored 2,600 ft offshore)
- Pipeline from seafloor to beach
- Dewater on beach
- Spread with bulldozers
- Approx. 1,000-ft long construction zone



Beach Nourishment Design



Environmental and Socio-economic Impacts

Beneficial Impacts

- Reduced overtopping
- Improved storm damage protection/flood control
- Larger recreational beach
- Economic benefits to community
- Expanded Piping Plover habitat

Adverse Impacts

- No long-term impacts
- Short-term impacts:
 - Benthic organisms
 - Turbidity
 - Construction activities



Compliance with Wetland Regulations

Affected Resource Areas

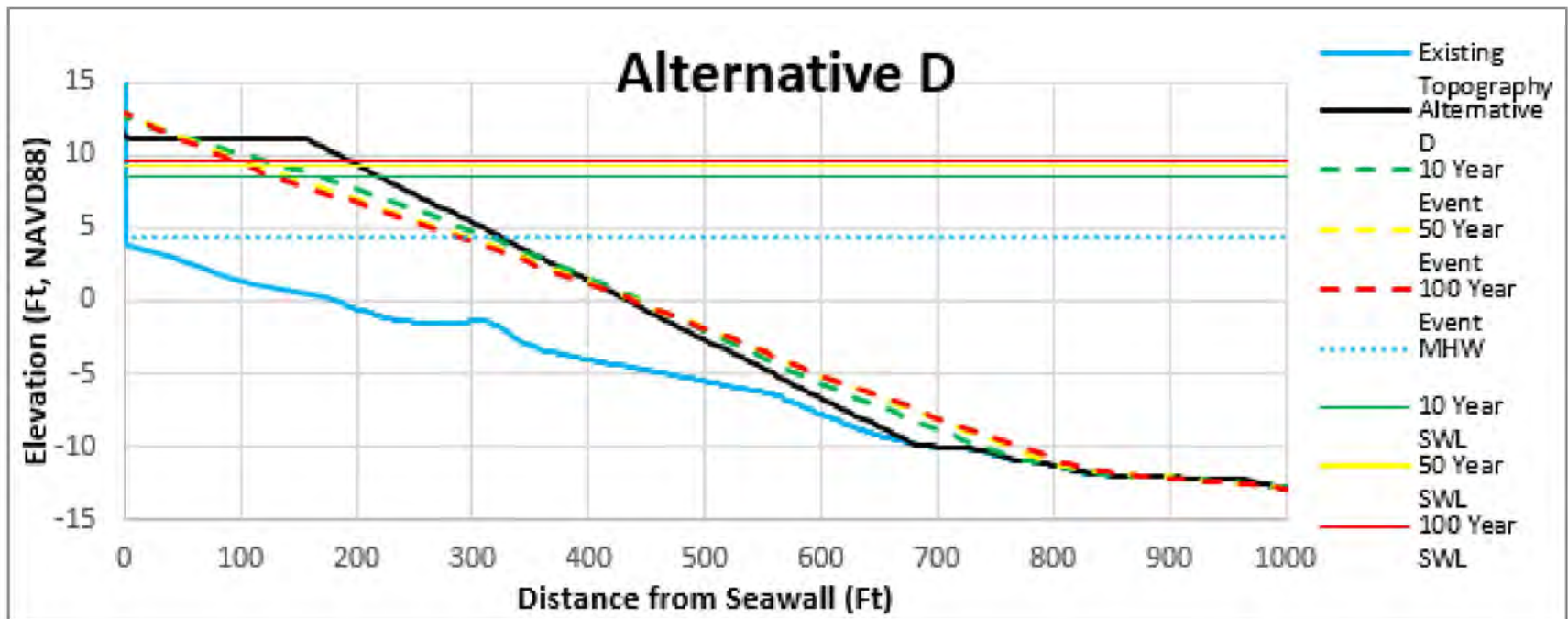
- Coastal beach
- Coastal dune
- Barrier Beach
- Land Under the Ocean
- Land Containing Shellfish
- Land Subject to Coastal Storm Flowage
- Estimated Habitats of Rare Wildlife



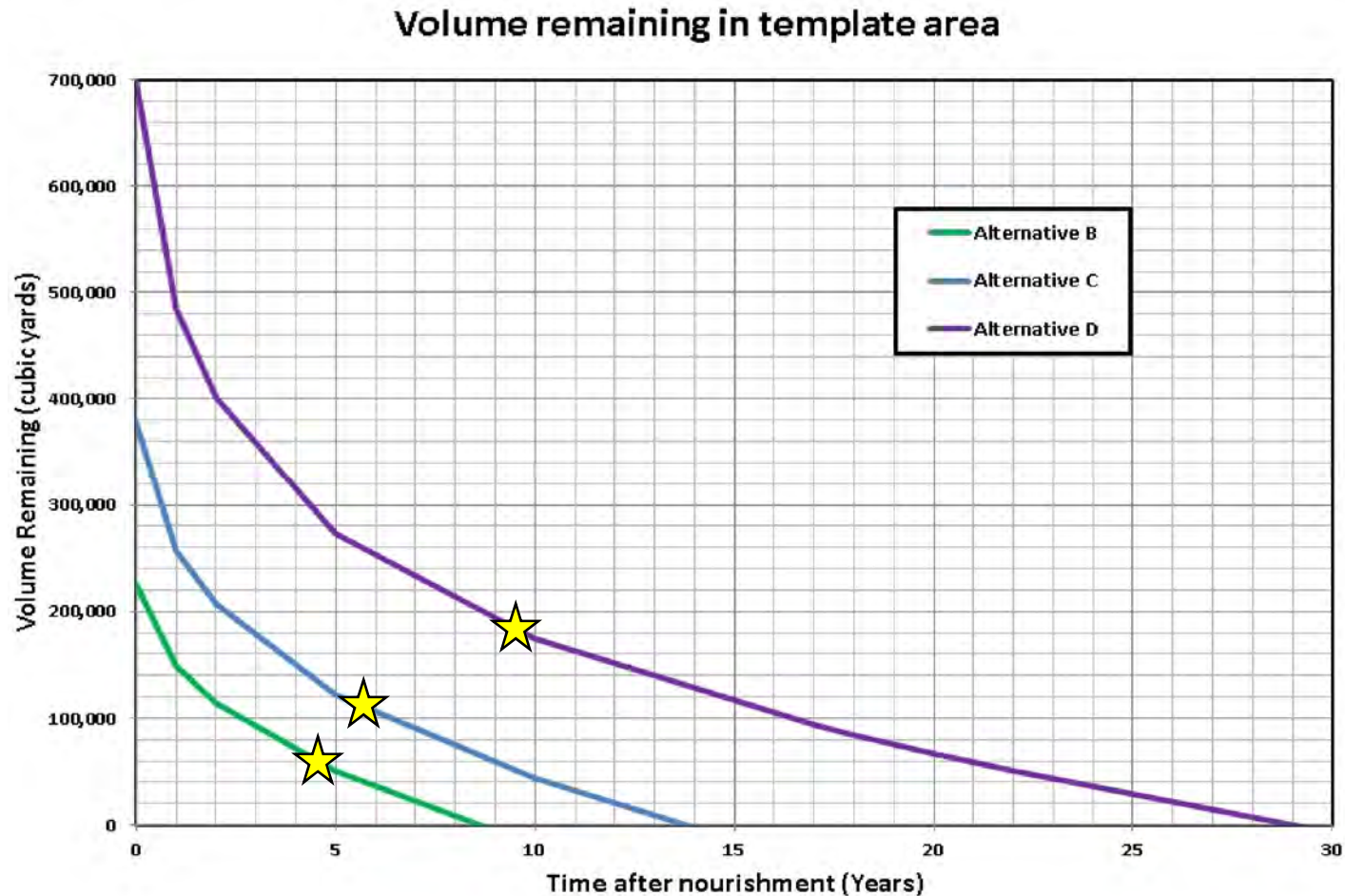
Summary: Project complies with performance standards for all protected resources

Performance during Storms

- Evaluated 10, 50, and 100-yr storm events
- Erosion/retreat of berm crest - not removal
- Retreat of MHW ~ 25 to 50 ft
- Sediment deposited at seaward toe of fill

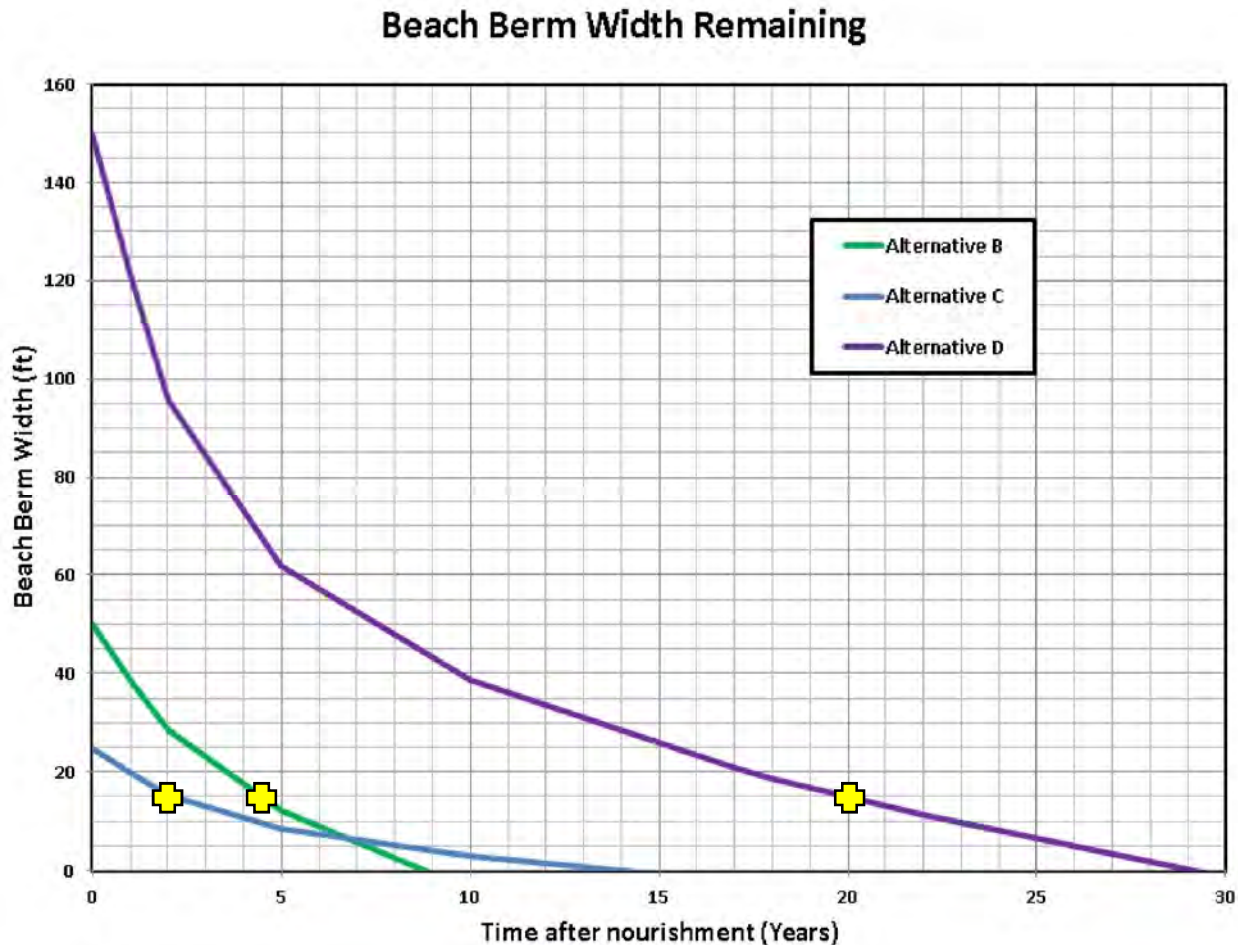


Service Life - Volume



Renourishment when 30% fill remains in footprint

Service Life – Berm Width



✚ Berm width critical for overtopping protection: 15 ft

State Agency Comments - DMF



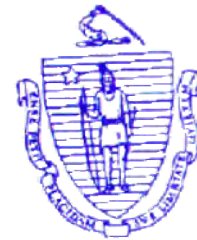
David E. Pierce, Ph.D.
Director

Commonwealth of Massachusetts

Division of Marine Fisheries

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Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Ronald Amilton
Commissioner

Mary-Lee King
Deputy Commissioner

April 20, 2018

Hull Conservation Commission
Town Hall
Attn: Chris Krahforst
253 Atlantic Avenue
Hull, MA 02045

Dear Commissioners:

The Division of Marine Fisheries (*Marine Fisheries*) has reviewed the Notice of Intent (NOI) application submitted on behalf of Massachusetts Department of Conservation and Recreation for the Nantasket Beach Coastal Storm Damage Reduction Project Phase 2 Beach Nourishment with regard to its impacts to marine fisheries resources and habitats. The proposed project involves the disposal of 700,000 CY of beach fill along 6,800 feet of Nantasket Beach in Hull, MA.

The proposed project is located within shellfish growing area MB12.0 which is currently prohibited for shellfish harvest. Shellfish species within this growing area consist primarily of surf clams (*Spisula solidissima*), blue mussels (*Mytilus edulis*), and ocean quahog (*Arctica islandica*).

Due to the location of the proposed fill, the time of year of the proposed work, and the benefits that beach fill will have for the protection of Nantasket Beach, we have no resource concerns at the proposed time.

State Agency Comments - CZM



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

MEMORANDUM

TO: Matthew A. Beaton, Secretary, EEA
ATTN: Anne Canaday, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: April 10, 2018
RE: EEA 12688 – Nantasket Beach Coastal Storm Damage Reduction Project:
Hull

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Expanded Notice of Project Change (ENPC), noticed in the *Environmental Monitor* dated April 21, 2018. Based on our review of the ENPC and our participation in a pre-filing coordination meeting, CZM supports the Request for a Waiver of a Mandatory Environmental Impact Report (EIR).

State Agency Comments - MEPA



Charles D. Baker
GOVERNOR

Karyn E. Polito
DEPUTY GOVERNOR

Matthew A. Beaton
SECRETARY

The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/envir>

April 27, 2018

DRAFT RECORD OF DECISION

PROJECT NAME	: Nantasket Beach Coastal Storm Damage Reduction Project
PROJECT MUNICIPALITY	: Hull
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 12668
PROJECT PROPONENT	: Massachusetts Department of Conservation and Recreation
DATE NOTICED IN MONITOR	: March 21, 2018

Pursuant to the Massachusetts Environmental Policy Act (MEPA, M.G.L. c. 30, ss. 61-62I) and Section 11.11 of the MEPA Regulations (301 CMR 11.00), I have reviewed this project and hereby **propose to grant a waiver** from the categorical requirement to **prepare an Environmental Impact Report** (EIR).

Next Steps

- Complete permitting
- Await funding for Piscataqua dredging (USACE)
- Secure funding for Nantasket Beach nourishing
- Implement

